

## SWPPP Development Resources to Assist with Development of the CGP SWPPP

### SECTION 1- General Information

Mapping Website used to determine Lat and Long if no other resources are available

<http://www.itouchmap.com/latlong.html>

Alaska Department of Fish and Game Interactive Maps website can be used as a source for topographical information for the development of general location maps as well as drafting the project site specific conditions. The Anadromous Waters Catalog interactive map is useful for gathering this site information.

<http://www.adfg.alaska.gov/index.cfm?adfg=maps.interactive>

Precipitation data for Alaska weather-recording stations are available at the Western Regional Climate Center Internet website: <http://www.wrcc.dri.edu/summary/Climsmak.html>. This site is also used to determine the “Spring Thaw” and “Fall Freeze-up” dates for determination of the winter shutdown period. This information can be found by scrolling down to “Temperature” under the “Period of Record” and going to either “Spring Freeze Probabilities” or “Fall Freeze Probabilities”. Areas identified as “Arid (<10in)” and “Semi-Arid (10-20 in)” can also be identified on this website by reviewing the annual average precipitation.

The NRCS Soil Survey Information website can be viewed to obtain the STATSGO Soils Data for uploading to GIS or use the more general Web Soil Survey for general soil information of your project area.

<http://www.ak.nrcs.usda.gov/soils/index.html>

Alaska growing season periods are defined by Ecoregion on Page 51 in the US Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0)* found at:

<http://el.erdc.usace.army.mil/elpubs/pdf/trel07-24.pdf#page=63>

The following two resources can be used to determine the 2-year, 24 hour storm event depths or other rainfall intensity storms. The first source provides more specific data although more difficult to obtain.

- National Weather Service Technical Paper No. 47 “Probable Maximum Precipitation and Rainfall-Frequency Data for Alaska” can be used to determine the rainfall values for specified storm events.

[http://www.nws.noaa.gov/oh/hdsc/PF\\_documents/TechnicalPaper\\_No47.pdf](http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No47.pdf)

- NOAA Hydrometer logical Design Studies Center- Precipitation Frequency Data Server (PFDS) for the calculation of precipitation intensity values for different storm events throughout Alaska.

[http://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_ak.html](http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html)

Map of DEC Contaminated Sites

<http://www.arcgis.com/home/item.html?id=315240bfbaf84aa0b8272ad1cef3cad3>

Table 3-6, found on Page 3 provides the general runoff coefficient values based on hydrologic soil group and ground slope which can be used in the rational equation to determine peak storm water runoff values.

## **SECTION 2- Compliance with Standards, Limits, and Other Applicable Requirements**

Website for TMDL List <http://dec.alaska.gov/water/wqsar/waterbody/integratedreport.htm>

If the project area is expected to be in an archaeologically sensitive area the Alaska Office of History and Archaeology may need to be consulted. Information can be obtained from the following website:

<http://dnr.alaska.gov/parks/oha/>

## **SECTION 3- Control Measures**

Alaska Storm Water Guide which can be used to assist with the development of site plans and BMP selection <http://dec.alaska.gov/water/wnpspc/stormwater/Guidance.html>

Appendix B of the Alaska Storm Water Guide which includes BMP Specifications can be viewed at

[http://www.dot.state.ak.us/stwddes/desenviron/assets/pdf/swppp/english/2011/apdx-b\\_swppp\\_2011.pdf](http://www.dot.state.ak.us/stwddes/desenviron/assets/pdf/swppp/english/2011/apdx-b_swppp_2011.pdf)

The California Department of Transportation (Caltrans) Construction Site BMP Manual is another good resource for various erosion and sediment control BMPs with some detailed information for the design of sediment basins. [http://www.dot.ca.gov/hq/construc/stormwater/CSBMPPM\\_303\\_Final.pdf](http://www.dot.ca.gov/hq/construc/stormwater/CSBMPPM_303_Final.pdf)

The following revegetation manual is a good resource for planning revegetation for either temporary or final stabilization. The other link is a direct link to the Alaska Plant Materials Site for other valuable information.

- A Revegetation Manual for Alaska (2008) for detailed guidance on region-appropriate plant species and revegetation methods. It can be found at: <http://dnr.alaska.gov/ag/RevegManual.pdf>.
- Native seed suppliers, seed mixtures, and other valuable information is available on the Alaska Plant Materials website: <http://dnr.alaska.gov/ag/akpmc/index.htm>

## **Miscellaneous Storm water related websites for calculation of peak storm water discharges for the design of storm water management structures as well as calculating annual sediment discharges using the Revised Universal Soil Loss Equation**

Example of General Training Material to calculate storm water discharges with the Rational Method

<http://www.cedengineering.com/upload/Rational%20Method%20Hydrologic%20Calculations%20with%20Excel.pdf>

Detailed guidance on calculating Peak Storm water Runoff Rates in Rational Method Calculations

<http://www.brighthubengineering.com/hydraulics-civil-engineering/60842-the-rational-method-for-calculation-of-peak-storm-water-runoff-rate/>

NRCS- Revised Universal Soil Loss Equation, Version 2 (RUSLE 2)- Used to calculate Sediment discharge quantities from a construction site dependent on soil cover, soil type, etc.

[http://fargo.nserl.purdue.edu/rusle2\\_dataweb/RUSLE2\\_Index.htm](http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm)

EPA National Storm water Calculator is a web based innovative tool which can be downloaded to calculate storm water runoff from an individual parcel. <http://www.epa.gov/nrmrl/wswrd/wq/models/swc/>

**Table 3-6. Recommended Runoff Coefficient Values for Rational Method**

Land Use	Runoff Coefficient (C) by Hydrologic Soil Group and Ground Slope											
	A			B			C			D		
	<2%	2 - 6%	>6%	<2%	2 - 6%	>6%	<2%	2 - 6%	>6%	<2%	2 - 6%	>6%
Forest	0.08	0.11	0.14	0.10	0.14	0.18	0.12	0.16	0.20	0.15	0.20	0.25
Meadow	0.14	0.22	0.30	0.20	0.28	0.37	0.26	0.35	0.44	0.30	0.40	0.50
Pasture	0.15	0.25	0.37	0.23	0.34	0.45	0.30	0.42	0.52	0.37	0.50	0.62
Farmland	0.14	0.18	0.22	0.16	0.21	0.28	0.20	0.25	0.34	0.24	0.29	0.41
Res. 1 acre	0.22	0.26	0.29	0.24	0.28	0.34	0.28	0.32	0.40	0.31	0.35	0.46
Res. 1/2 acre	0.25	0.29	0.32	0.28	0.32	0.36	0.31	0.35	0.42	0.34	0.38	0.46
Res. 1/3 acre	0.28	0.32	0.35	0.30	0.35	0.39	0.33	0.38	0.45	0.36	0.40	0.50
Res. 1/4 acre	0.30	0.34	0.37	0.33	0.37	0.42	0.36	0.40	0.47	0.38	0.42	0.52
Res. 1/8 acre	0.33	0.37	0.40	0.35	0.39	0.44	0.38	0.42	0.49	0.41	0.45	0.54
Industrial	0.85	0.85	0.86	0.85	0.86	0.86	0.86	0.86	0.87	0.86	0.86	0.88
Commercial	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.89	0.90	0.89	0.89	0.90
Streets: ROW	0.76	0.77	0.79	0.80	0.82	0.84	0.84	0.85	0.89	0.89	0.91	<b>0.95</b>
Parking	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	<b>0.97</b>
Disturbed Area	0.65	0.67	0.69	0.66	0.68	0.70	0.68	0.70	0.72	0.69	0.72	0.75

These Runoff Coefficients are recommended for storms of 2 to 10 yrs recurrence in simple drainage areas less than 100 acres. When calculating Runoff Coefficients you are recommended to determine the percentage of your drainage area which fits within each land use category found in Table 3-6 and multiply that percentage value by the corresponding Runoff Coefficient and add to the other calculated coefficients to determine a weighted Runoff Coefficient. See Example below for a drainage area with 80% Residential and 20% Pasture.

1	2	3	4
Land Use	Percent of Total Land Area	Runoff Coefficient	Weighted Runoff Coefficient <sup>1</sup>
Residential (1/2 acre)	80	0.35	0.280
Pasture	20	0.42	0.084
Total Weighted Runoff Coefficient = 0.364			
<sup>1</sup> Column 4 equals Column 2 multiplied by Column 3.			